

AMENDMENTS TO THE SPECIFICATION

Please amend the title of this application as follows:

~~IMPROVED METHODS AND APPARATUS FOR ELECTROLYSIS OF WATER~~

Page 1, lines 2-6 of the specification, please amend as follows:

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a division of copending continuation-in-part application serial no. 08/334,952, filed November 7, 1994, which is a continuation-in-part of application serial no. 894,099, filed June 5, 1992, abandoned, which is a continuation-in-part of application serial no. 419,371, filed October 10, 1989, now abandoned.

Please amend the specification beginning at page 20, line 20 to page 21, line 22, as follows:

Referring to Fig. 5, there is shown an electrochemical cell assembly ~~10~~ 50 consisting of a double wall jacketed type glass cell. The outer cooling jacket ~~12~~ 29 included cooling water inlet and outlet ports ~~14~~ 31 and ~~16~~ 33, respectively. The undivided electrolyte compartment ~~18~~ 35 was equipped with a series of centrally positioned insulating glass rods ~~20~~ 18 spaced from one another. The cell cover ~~22~~ 40 was a Teflon® cap fitted with a precision thermometer and thermocouple (not shown) mounted through vent openings ~~24~~ 42. Glass rods ~~26~~ 38 were fixedly mounted to cell cover ~~22~~ 40. The cathode 26 consisted of a Johnson Matthey palladium wire (99.9 percent purity) having a diameter of 1mm X 4cm length wound onto a glass insulator 27. The conductor for the cathode was suspended through a central vent opening 28 in the cell cover. The anode 30 was a 0.5mm diameter platinum wire wound around

insulating glass rods ~~20~~ 38 , and positioned symmetrically around palladium cathode 26. The electrolyte consisted of 65 ml of reagent grade 0.1M LiOD/D₂O. The entire cell assembly was kept in a constant temperature bath maintained at 20±0.1°C.

The power source for electrochemical cell 10 was an electronic pulsing device 32 fabricated by Scientific Prototype Manufacturing Co., Mespath, New York. Pulsing device 32 followed the basic circuit diagram of Fig. 4. The device was capable of superimposing a D.C. pulse of 40V on cell ~~40~~ 50. The pulsing device provided a pulse width (pulse on-time) variable of 0.5 to 20 μ sec and inter-pulse time (pulse off-time) between 30 and 1200 μ sec. The instrument consisted of a 40V D.C. power supply, an F.E.T. switch to apply the 40V to the cell under test, was capable of delivering up to 100A for these short durations, and a fast isolating diode to disconnect the normal electrolysis power supply during application of the pulse. Pulse width and interpulse time could be varied by means of continuously variable manual controls with actual cell operating parameters measurable externally by conventional laboratory equipment connected directly to the cell, i.e., voltmeter 34, ammeter 36, including a coulometer (not shown) and oscilloscope (not shown).